I mean we have a kind of an unlabeled spreadsheet here with the bioassay data on it, but the names are removed. You know, we can -- I guess we can provide this to -- to Ray, if you would like, or we can go ahead -- or we can prepare something following this meeting, which might be more to our liking. But I think what you'll find is that once you average those bioassay data, you'll get something very similar to the intake -- the (unintelligible) intake.

DR. H. BEHLING: It's just a question of which samples belong to which person (unintelligible) --

MR. HINNEFELD: (Unintelligible) column one or column A, I think there might be an A and a B or --

DR. H. BEHLING: Yes.

MR. HINNEFELD: -- those are -- A and B are (unintelligible) --

DR. H. BEHLING: Okay, okay.

MS. K. BEHLING: Okay.

MR. HINNEFELD: -- A on one person --

DR. H. BEHLING: Well, we can do this ourselves and then get back to you.

MR. HINNEFELD: Okay.

DR. H. BEHLING: Give us a copy of that and then we could resolve this issue.

MS. K. BEHLING: (Unintelligible) centered around the critical population, does that represent --

THE COURT REPORTER: Okay, I'm having a real problem here -- is this Dr. Behling -- Kathy Behling?

MS. K. BEHLING: Behling, I'm sorry, I'll slow down and speak into the mike.

THE COURT REPORTER: That's good, thank you.

MS. K. BEHLING: The critical issue is regarding the population group and whether that critical -- that does represent the critical population group. And if SC&A can convince itself that that group is the critical population group, we will -- we're in agreement with NIOSH on this issue.

And Stu, I'll let you start with your next issue.

MR. HINNEFELD: Okay. Issue number three on the -- on case #1 has to do with the absorption type that was chosen for fitting, and whether -- you know, absorption type M was what was

selected to do the intake fitting and the reviewer suggested that perhaps S should be evaluated to see what -- whether that might be appropriate. We feel there is a number of literature sources that would indicate that U308* in the (unintelligible) that it was produced at Blockson and in that fashion is -- is better approximated by type M than type S. We have in fact, though, fit it -- the data, the intake data, did the intake estimates using a type S absorption amount and -- help me out on this, Tom -- as I recall, the difference in doses to essentially all the organs is relatively minor. Of course the respiratory tract would be essentially different if you were assuming a type S intake, and then the GI tract would be somewhat -- somewhat higher if you assumed type S intake. In the other cases, even though the type S intake is higher -- if you model the intake rate using type S, it will be higher than it was if you modeled it with type M, dose conversion factor for intake drops for all the other organs. And so it comes out somewhere around a factor of two in most of those -- is that -- is that right?

MR. TOMES: This is Tom Tomes. Yes, the -- the -- (unintelligible) respiratory tract result -- result is roughly -- slightly under a factor of two higher if you -- if you go with type S.

MR. HINNEFELD: So it's a modest change with type S. We feel like the literature supports type -- type M.

MS. K. BEHLING: And I gue-- this is Kathy Behling, and SC&A's approach to -- or feelings about this situation is that NIOSH typically does use a claimant favorable approach when doing these calculations. And in this particular case we also ran IMBA and checked some numbers with the S and the M, and we came to the same conclusion that you did. It might be more claimant favorable if you used S, and it's not a large factor, but a factor of two is what our preliminary estimates come up to, also. And just in the name of claimant favorability we felt that using type S would be more appropriate -- or at least -- I'm glad to hear -- 'cause my recommendation was going to be that NIOSH actually make some IMBA runs and make some comparisons to see which is more claimant favorable.

DR. H. BEHLING: This is Hans Behling. Because of the complexity of this particular discussion, I just want to review a couple of things so that people who are here in attendance will understand what the issue is to begin with.

Type S is a classification of solubility meaning it's slow, and if it's inhaled into the lung, a type S solubility means that the material is not readily dissolved and removed from the lung, meaning that the lung actually gets a higher dose per unit intake if it's a highly insoluble material as opposed to M, which is medium.

Now there comes a situation where there's sort of a paradox when you say well, if the person had a lung cancer, clearly the favorable assumption is that it is a slow removal or type S. But when it's not the lung and you put in M, you would also assume that well, M classification would dissolve quicker in the lung fluid, be transferred from the lung into the bloodstream where it would be assimilated, and that, too, is true, without question.

However, there is a kink here, and that is the

intake was actually calculated from urine data, so we don't know what the respirable intake is, and if you go and calculate the urine output containing this radionuclide, you will come to the realization that if you start out with the assumption that the urine that you're analyzing for this particular radioisotope is assumed to be type S, slow, you will start out with a much higher intake and therefore the -- the balance that you achieve that I just mentioned for a higher degree of rate of transfer from the lung to the bloodstream is offset by higher intake. And I think -- we scientists understand it, but it's a complex problem for those who may not be familiar with it. And so the issue, as -- as -- as Stuart pointed out, is running the IMBA, doing the calculation, starting out with the assumption that the urine contains either type S or type M, and back-calculating what the intake for those two assumptions might be, and then determine what the dose to a particular organ is that is of interest in terms of the cancer type. And I believe you've done that. You also stated that the difference is marginal, and as far as I'm concerned, that

issue can be resolved, given the fact that you've done that calculation.

MR. GRIFFON: This is Mark Griffon. What's the resolution there then? 'Cause I've -- I've heard that you're saying the literature supports type --

MR. HINNEFELD: Well, I guess our -- our position was that -- we feel like the literature support for U308 that is not high-fired -- (unintelligible) high-fired, even for what I would call uranium rock*, which is usually described as U308. It's usually a mixture of oxides. Even that type of a uranium oxide exposure tends to clear faster than a type S clearances, so we feel like -- and this was a chemically-produced, precipitated and filtered product that probably was -- maybe a mixture of oxides, as well. We feel like the literature supports the more rapid M clearance, and so -- and since the dose difference is relatively small -- I mean the intake -- the dose values for essentially non-metabolic organs is relatively small given the Blockson model, we don't think it's particularly important -- it doesn't make -- we feel like

we're on strong ground where we are. If we were to go to type S it wouldn't be a particularly -- you know, much of a change and it wouldn't be -- and if -- and we feel like there's sufficient evidence that there is not much question about the solubility of this particular kind of material.

Now behind all this -- the sub-context to all this conversation is we have not done lung cancer cases from Blockson. So where it would really matter, which is in the respiratory tract, we've not done any. As an additional exposure pathway at Blockson, that is the radon that would be present there. And the current -- our current direction will be that may in fact be part of the dose reconstruction, the radon that would be at a Blockson plant may be a part anyway. Given the risk factors for radon, I think the uranium exposure for lung cancer is going to be irrelevant.

DR. H. BEHLING: Just a fin-- this is Hans Behling again. Just a final point here, and I think Stu pointed out, the decision to go with type M is -- is one that has not yet been challenged by a lung cancer. And it is always

NIOSH's tendency to be claimant favorable. And if there had been a lung cancer, I believe NIOSH would opt to -- to use type S, meaning that would give a higher dose. And clearly for the lung, that would be the case. But SC&A contends that the same holds true, if you start out with the urine sample as a way of defining what was taken into the body, that the higher dose would also be associated with an assumption that starts out with type S. I mean I think that's the -- the nuts and bolts. The critical difference would be for the lung, clearly, between type S and M. The big ticket for the difference would be the lung as a source -- or as the site for cancer. But SC&A basically point out that even for non-metabolic tissues and non-lung cancer lesions, the classification assumes that S would yield a higher dose.

UNIDENTIFIED: (Unintelligible) here is this is a very case-specific situation where --

THE COURT REPORTER: I'm sorry, who is this?

MR. FITZGERALD: This is Joe Fitzgerald.

THE COURT REPORTER: Thank you.

MR. FITZGERALD: -- that is being driven by

both the empirical result, the actual calculated results, and the fact that lung cancer has -- and so there's a number of qualifiers that permit a very case-specific (unintelligible) to use M.

DR. H. BEHLING: But I -- Hans Behling again. I believe that the assumption was that if you go with type M you were claimant favorable. I think that the assumption, because if you start out with -- and let me -- let me give you an explanation. If you start out and say -- I'll -- I'll expose two guys, each to one microcurie, but one is M and one is S. The guy with -- with -- with the type S is going to have -- have -- have a lower exposure to tissues other than the lung than the one with M. But if you start out with the calculation of the urine sample, you can say you both have one picocurie per -- per cc or something and then you are -- we know have type M and you have S, the guy with type S had a higher body burden and lung burden than the other guy. Okay? That's the difference. And it's a very technical fine point that, after we looked at it and we sort of say are you being claimant

favorable by assuming type M, which superficially would lead you to believe it's claimant favorable when it's not.

MR. GRIFFON: Yeah, Mark Griffon. I just -- I mean I get the point. That's what I was asking you, Stu, is that, you know, is there -- is there a clear, scientific basis for using the type M rather than just going with claimant favorable? You know, and if -- if a clear scientific basis has --

MR. HINNEFELD: Well, we felt that -- we feel like that.

MR. GRIFFON: Right, and then that would override, I think --

MR. HINNEFELD: (Unintelligible)

MR. GRIFFON: Right.

MR. HINNEFELD: At Blockson.

MR. GRIFFON: Right.

MR. FITZGERALD: (Unintelligible) site-specific in the sense that this doesn't necessarily establish a precedent -- other sites, other situations are -- for this particular case you have the empirical results, as well as no lung cancers that you're actually --

MR. HINNEFELD: We have not used as models

(unintelligible).

MR. FITZGERALD: -- you haven't used as models for lung cancer. For that narrow perspective (unintelligible) do it.

MR. GRIFFON: Mark Griffon again. I think this comes up in a lot of cases that we're going to see, which is this question of, you know, is this claimant favorable versus do you have a scientific basis, so you don't necessarily have to go with claimant favorable. That's what I'm trying to figure out is which -- which one applied here for this case or -- I know --

MR. HINNEFELD: Well --

MR. GRIFFON: -- going to type S -- it sounds like it will increase even the other organ doses slightly.

MR. HINNEFELD: -- (unintelligible) modestly.

MR. GRIFFON: Right. But -- and it's claimant favorable, but if you have a scientific basis for the other --

MR. HINNEFELD: Well, that would -- that would be our -- our view of this was --

THE COURT REPORTER: Is this Dr. Hinnefeld?

MR. HINNEFELD: This is Mr. Hinnefeld, sorry.

THE COURT REPORTER: Thank you.

MR. HINNEFELD: Our view of this was that there is, we feel, supporting literature evidence that this material would not behave as a type S material. Now when we get to a lung cancer, that could put us in a difficult position because we're thinking well, are we so confident of it -- because it could very well make a difference in a lung cancer case. But the difference is so small, I can't imagine it's really going to matter in any of the other cancers. But in a lung cancer case, it's going to matter. We have not addressed the issue yet, and chances are we won't ever have to address the issue because the uranium exposure won't ever be necessary for a lung cancer to become compensable. The radon risk factors are so -- so broad, you know, the uncertainty -- what happens in a radon exposure, the uncertainty is so broad that it hardly takes any radon exposure --

MR. GRIFFON: (Unintelligible) how radon is handled. We still don't know that.

MR. HINNEFELD: We don't know for sure how that's going to turn out, but if it hasn't turned out one way yet, it -- my view is it's

probably going to turn out the other way.

DR. H. BEHLING: I think the final issue -- Hans Behling again. The final issue here is really one of saying -- according to the regulations, we're supposed to, in the absence of definitive scientific data, give the benefit of the doubt to the claimant. The question here is do we have a reasonable scientific basis to support saying it is type M as to assuming it is type M, 'cause that's what it comes down to.

UNIDENTIFIED: Sure. That's the nut of it. I agree, that's the (unintelligible).

DR. H. BEHLING: The issue.

MR. HINNEFELD: (Unintelligible) a lot of discussion (unintelligible) when you get to the final dose, but (unintelligible) okay.

MR. GRIFFON: Can -- can -- Mark Griffon again. One -- just -- just -- (unintelligible) back. I was -- back to number one, I know you went over that already, but there's something about dust loading in there and it apparently doesn't apply since there was no air sampling for this site. Why was it brought up initially -- can someone --

MR. HINNEFELD: Well, there -- to bring you up to speed, there's discussion in the Blockson site profile -- I'll start, and if I say something not quite right, you guys -- there was discussion in Blockson site profile that essentially tried to estimate from source term type information what might the airborne have been.

MR. GRIFFON: Okay.

MR. HINNEFELD: And there were two approaches of -- one of which had to do with a release fraction or -- an assumed release fraction of what percent of the production will become airborne. Okay? And there was a second technique that says well, we have data -- we have airborne data from uranium mill operations from kind of the same time period, and what kind of airborne was measured there, and actually some pretty good air sample -- air measurements -- studies at those plants, and they provided a certain number, and they were producing at about ten times the rate that Blockson was producing at, so about one-tenth of those airborne concentrations may be appropriate for Blockson. But neither of those

arguments are very convincing. Okay? Neither of those arguments are very convincing and the TBD -- TBD doesn't rely on them at all because it relies on the bioassay data.

MR. GRIFFON: So -- so to go back to my earlier question which was about air sampling (unintelligible) urine data, now let me ask about the source term compared to --

MR. HINNEFELD: Yeah.

MR. GRIFFON: I mean do you try to project intakes from that data and were they in the neighborhood of the projections --

MR. HINNEFELD: Well, the source term calculations come -- line up pretty closely with the bioassay. Okay? They happen to do that. I don't know that they -- you know, I think they don't really provide much convincing support, but I think our position is we don't really need any convincing support given the bioassay model that was used to model the intake.

UNIDENTIFIED: And I think the comment, as I understood it, was --

THE COURT REPORTER: Who is this?

MR. FITZGERALD: I'm sorry, Joe Fitzgerald --

becomes somewhat superfluous in the sense that it's not used, but it also raises questions as to the technical validity and whether it (unintelligible) it by including it and referencing it if unused. It sounds like I guess -- just going back to (unintelligible) whether it would be better to delete it or not give it (unintelligible).

MS. K. BEHLING: (Unintelligible) scientific (unintelligible).

MR. FITZGERALD: Not very (unintelligible), yes.

MS. K. BEHLING: Yes.

MR. FITZGERALD: Yes. Okay? Doesn't sound like a disagreement, it just sounds like a matter of --

MS. K. BEHLING: Exactly.

MR. FITZGERALD: -- how to deal with it (unintelligible) standpoint.

MR. GRIFFON: But -- so really for the whole site, what it comes down to is we're still relying on that 20 people. And then I think it was question four, did we have agreement on both sides here on the ingestion? I mean I tend to agree with Stu's presentation of that,

but I didn't hear a response from you guys --

DR. H. BEHLING: If -- Hans Behling again. If -- if the entire dose reconstruction is based on urinalysis, it makes very little difference as to what the ingestion would be because you're measuring all pathways.

MR. GRIFFON: Right. So that's resolved. Right?

MS. K. BEHLING: I believe the only additional point -- this is Kathy Behling -- that John Mauro wanted to make on that particular issue was -- and maybe it does not affect Blockson, but hopefully -- NIOSH did agree that they would look into this issue for other cases. In the Blockson TBD the ingestion rate of .49 picocuries per day was estimated, and we went back into the literature and went into the EPA's exposure factor handbook and, based on that, the ingestion per day is higher based on whether you're in a garden or you're working in a dusty attic. And we just wanted to point out to NIOSH that that should be considered for other types of cases and other TBDs, that we just felt that that ingestion rate was lower than...

UNIDENTIFIED: And our -- I think that what we have -- our standing comment, we said that we think that --

THE COURT REPORTER: I'm sorry, who is this?

MR. HINNEFELD: This is Stu Hinnefeld. Our standing comment that we think that that's a valuable reference that's been brought to our attention and (unintelligible) starting point for our evaluation of those types of (unintelligible).

MS. K. BEHLING: Okay.

MR. HINNEFELD: Are we onto issue num-- we're still on case #1, huh? Issue number five? Some of them have fewer issues. We'll make that (unintelligible) later.

Issue five relates to the manner in which external exposure was established -- the external exposure quantity for dose reconstruction, and questions whether 400 hours per year in the vicinity of the separated uranium oxide is really the approp-- the appropriate number to use, or if they were in the vicinity more than 400 hours per year.

We feel like -- the distribution we built uses 400 hours at one foot from the drum of

material. A median -- or mean of a lognormal distribution, with (unintelligible) percentile of the lognormal distribution being 2,000 hours one foot from the drum, we felt like -- that seems to be -- to us to be pretty generous in terms of the amount of time that close to the drum (unintelligible) exposures.

MS. K. BEHLING: In rethinking that issue, SC&A does agree with that, and I believe that also takes care of issue number seven. For some reason there were two issues that were about -- in which they discussed the 400 hours.

MR. HINNEFELD: Okay, that was clearly my mistake. I wrote it twice.

MS. K. BEHLING: Oh.

MR. HINNEFELD: Not that I think about this a lot.

Okay. Issue number six is -- again, SC&A has pointed out a discrepancy in MCNP calculations. We've not resolved the discrepancy, but we are trying to resolve -- figure out what -- how come we got one number and SC&A got the other, and so we hope to have a resolution. I understand it may be as -- I think it was -- said in November that the set-up that we had

prepared for our numbers didn't include all that should have been included and I don't know if that's the case or not. We're -- we're chasing that down. (Unintelligible) doses out of -- interesting question (unintelligible) on the (unintelligible), though, is that the doses -- number that we used, dose value we used was a measured value from a surrogate uranium product, it wasn't from UO4*. So even though we ran an MCNP run and had a particular dose rate value, we didn't (unintelligible). And again, that value wasn't used to (unintelligible) dose reconstruction. The value that was used was a measured value off of UO4. Now --

THE COURT REPORTER: Mr. Hinnefeld, I'm having a hard time, can you --

MR. HINNEFELD: I'm sorry. The dose value that forms the basis for the external dose reconstruction was a measured value from a container of a -- what I would call a surrogate radioactive material. It was uranium, but it was uranium tetrachloride, which I referred to as UO4*. It was not a drum of yellowcake, which is the description of material for the

product of Blockson Chemical.
So you know, given the information we have now, our view is we feel more strongly about measured values, even with some slight chemical difference in the source, than we do about the model.
Now backing some benchmark of the model to that measured value, if we have a UF4* MCNP run and it said something about our measured dose, I think that would be important information we would have to consider. I think also when we're talking about MCNP we're interested in the density of the material that was used, and what effect it will have. The density is described as a (unintelligible) -- in the SC&A review it's described as density of two if it's set up for the MCNP run. That seems unusually low to us. We think that a (unintelligible) compounds are in the six to eight density area, but I don't know what that does to the outcome. It's not intuitively obvious what that would do to the outcome because your photon generation rates will go up, as will your (unintelligible), and so I don't really know what that means and whether it would make any

difference. But the core issue, though, has to do with whether a measured value is better than a model value. That's the core issue.

DR. H. BEHLING: Hans Behling. Just a question on that issue because I was not able to -- (unintelligible) and so I have to ask questions --

THE COURT REPORTER: Okay, I'm just not getting anything right now.

DR. H. BEHLING: I'm being blocked here by a computer screen. This is Hans Behling, and the question I have with regard to this issue about an empirical value versus a theoretical value, and Stu had mentioned they actually used the empirical value, which coincided pretty close to what they calculate as a theoretical value, which however did (unintelligible) our theoretical calculation. And he mentioned the issue of UF4 versus uranium oxide and the density given to -- and perhaps packing quantity, et cetera. But I also have, in addition to those issues, a question that involves the instruments that we use for the empirical measurement. Do you have any information as to what was used to make those

measurements, which instrument, because one of the things that is a concern here is that these are very low energy photons -- at least a component of it is -- and depending on the type of instrument that may be used, and it may have a very real effect to things such as, for instance, the high dose or (unintelligible) dose, that an instrument that has a fairly large amount of metal surrounding the sensitive (unintelligible) or something, may underestimate low energy photon contribution. And that's my only point here for asking what instruments were used to get me the empirical measurements?

MR. HINNEFELD: Well, it was probably (unintelligible). I'm sure we have it on the survey form, I'm just not familiar with which instrument it was. And of -- so -- I understand the -- your point --

THE COURT REPORTER: Okay, there's something going on. I'm just getting terrible reverberation here. Is there something wrong with y'all's mike?

MR. HINNEFELD: I don't know. Is this any better, Ray?

THE COURT REPORTER: That's better, yeah.

MR. HINNEFELD: Okay. I think -- the last comment I said was it's -- we have the type of instrument that was used on the survey that we got. I don't know what it is sitting here, but I'm pretty confident it was a -- like an RO2 or an RO-something. It was an ionization chamber survey meter.

I think it's also -- I forgot to mention this earlier, that the measure -- the measured value that's the basis of the dose reconstruction value is only about half of the value from the MCNP run whereas the MCNP run that was done and described was only one-fifth, so the measured value was much closer to the SC&A MCNP run than -- effectively closer to the SC&A MCNP run than what I will call the NIOSH MCNP run. The dose rate is roughly half of the MCNP run that SC&A did, as opposed to one-fifth, so I guess I will -- I would like to take this back to additional consideration. And again, I don't know that I'm ready to say today what it is. Again, we're talking about a factor of two on an external dose (unintelligible) uranium plant, and so --

MS. K. BEHLING: This is Kathy Behling. I just wanted to make additional comment on the measured dose rate, that it's our understanding that the drum that was measured was only partially filled, and that the measurements that were taken were surface measurements and there was a measurement taken in the midpoint of the drum and also at the bottom of the drum, which was 50 percent lower and then those two values were averaged. And there was also a microshield calculation that was done to calculate the surface measurement to -- and determine what the dose would be one foot from that --

THE COURT REPORTER: Okay, I can't hear you, I'm sorry. It sounds like y'all are under the ocean at this point.

MS. K. BEHLING: Okay. I'm just stating that we had some questions about that measured value because the drum that they measured is -- took a sample from was a partially filled drum. The measurements were taken I guess midpoint on the drum, I believe from a Hanford -- or from a --

MR. HINNEFELD: Fernald.

MS. K. BEHLING: -- a Fernald, a drum, yes, and

at the bottom. And the -- the lower portion measurement was 50 percent that of the mid portion, and those two values were averaged, and those were surface measurements. And in order to determine the one -- the measurement at one foot, they -- there was a microshield calculation done and we have not been able to reproduce that microshield calculation. And I guess based on the fact that we found this five -- a factor of five error on the MCNP calculation, we're also questioning that measured dose. And (unintelligible) can provide you with more details as to our MCNP calculations and also (unintelligible) measurements, so this is still an open issue as far as SC&A is concerned.

DR. H. BEHLING: Hans Behling again. I do want to at least acknowledge because among the first 20 cases we had several skin cancers, and I guess -- again, going back to the instrument in question, if you're measuring a dose that might be equivalent to what's called a deep dose or a 1,000 milligram per centimeter squared dose, that number may not apply if the person in question who's seeking to be compensated has a

skin cancer. And again, the photons that are being emitted from this type of source has very low penetrating power, and so the ratio between a deep dose and a shallow dose may be substantial and may affect an estimate of skin dose if the person who's seeking compensation suffers from a skin cancer. So something should at least be made to -- to account for the differences between a shallow dose or a deep dose, depending on the claim in question.

MS. MUNN: This is Wanda. I have a question -- a clarifying question. I'm not sure I understood what I think I heard correctly. There is a difference of -- did I understand approximately five times between the two calculations of dose at one foot?

MR. HINNEFELD: Yes, that's -- I believe -- it's described -- it's described in the SC&A review as a difference of about five, and I -- to the best of my recollection it's about a factor of five between the two MCNP runs.

MS. MUNN: With -- with which of the runs being the higher?

MR. HINNEFELD: The SC&A run is higher.

MS. MUNN: All right. Thank you.

MS. K. BEHLING: One -- this is Kathy Behling, and one last issue on the measurement. I believe the -- as Stuart indicated, the measurement that was done on the drum was UF4. And if you look at the uranium content of UF4, I believe that's 76 percent, according to (unintelligible), and if you look at uranium oxide, the uranium content would be 65 percent, so that's another discrepancy that would make your measurement lower -- the measurement would be lower than what you might actually find if you took measurements on a drum that was coming from Blockson.

MR. HINNEFELD: Is it obvious to everybody that it would be lower? It's not obvious to me which way it would move.

MR. GRIFFON: Right.

MS. K. BEHLING: Oh, is that right? Bob says differently.

MR. GRIFFON: I'm not -- this is Mark Griffon. I'm not sure on that, either, because of the -- what Stu described, the shielding --

MR. HINNEFELD: -- (unintelligible) compete with each other and I don't know which one --

MR. GRIFFON: But I think (unintelligible)

resolution here, I think NIOSH has kind of agreed to go back and maybe -- maybe you can model UF4, as well.

MR. HINNEFELD: Well, we're certainly taking another look at the MCNP and figure out what happened there. We will -- I think there's some interesting questions here, both about the surrogate material and this low energy photon. Granted it's been filtered by a steel drum, but it's still not a (unintelligible) spectrum that's hitting that detector and that's probably what it was calibrated to, and so what do we know about that. There are some interesting issues been raised here. Again, we're talking about a factor of two in the external dose, which is relatively low in a uranium plant. Okay? We're pursuing a lot of scientific theory here in a process that really isn't designed for scientific theory, you know, and I don't want to apologize for a lot of stuff, but we are pursuing a lot of things that we may be held to a third decimal point here of the probability of causation. I don't know that --

MR. GRIFFON: Right, but -- but --